

## **Fact Sheet: 3**

### **Volatile Organic Chemical (VOC) Sampling Noncommunity Public Water Supplies**

Water Supply Serial Number (WSSN) \_\_\_\_\_ Well # \_\_\_\_\_

Name of Water Supply \_\_\_\_\_

Sampling Contact \_\_\_\_\_ Phone \_\_\_\_\_

Health Department Contact \_\_\_\_\_ Phone \_\_\_\_\_

VOC Sampling Frequency: Number of Samples \_\_\_\_\_ taken every \_\_\_\_\_ months.

Sampling Location \_\_\_\_\_

(Sampling siting plan approved by local health department in sanitary survey)

Laboratory Name \_\_\_\_\_ Phone \_\_\_\_\_

#### **Volatile Organic Chemicals – General Information**

Volatile organic chemicals include components of petroleum based products and industrial solvents and chemicals. They may be associated with leaking underground tanks, improper disposal practices, leachate from landfills and other activities. Ingestion of these chemicals at certain levels in drinking water may lead to anemia, liver and spleen disorders, reproductive problems and an increased risk of certain cancers. Their presence in drinking water may be linked to possible contamination by these sources and may indicate a poorly constructed or damaged well, a vulnerable aquifer, a contaminated site or a combination of any of these. The US EPA has established Maximum Contaminant Levels (MCLs) for some of these chemicals and others are required to be tested for but no MCL has been established.

#### **Sampling Protocol**

- Obtain the proper sample containers from a laboratory certified by the DEQ for analysis of all required parameters.
- The sample vials may contain a chlorine neutralizer. Tap each vial in an upright position to drain the preservatives from the cap. Do not rinse the bottle before collection. Do not open the vial until ready to collect the sample. Do not touch the inside of cap or vial.
- Select a clean faucet without attachments or leaking stem. Allow water to run for ten minutes (until cold) at full flow.
- Reduce the flow and collect the sample directly into all vials provided. Fill the vial until water rounds at the top of the vial. Cap and invert to check for air bubbles in the vial. (The septa, i.e. the rubber part inside the cap ring, must be smooth side down in contact with the sample to avoid possible contamination.)
- If air is observed in the inverted sample, remove the cap, add water (don't dump) and recap as instructed.
- Keep the samples refrigerated and complete the report form making sure to record the WSSN, well number, date and time of sampling and return address on the form correctly. Be sure to request the proper lab analysis or test code for volatile organic chemistry if using the DEQ lab. Use the appropriate forms if using a different certified lab.
- Deliver or mail the sample units together to the lab as soon as possible so the transit time is not exceeded. See the unit label for transit times.

## Volatile Organic Chemical Sampling (with waiver)

Contaminant	MCL (mg/l)	Contaminant	MCL (mg/L)
Benzene	0.005	Vinyl Chloride	0.002
Carbon tetrachloride	0.005	1,2-dichloroethane	0.005
Trichloroethylene	0.005	1,2-dichloroethylene	0.007
1,1,1-trichloroethane	0.20	Para-dichlorobenzene	0.075
Cis-1,2-dichloroethylene	0.07	Ethylbenzene	0.7
O-dichlorobenzene	0.6	Styrene	0.1
Tetrachloroethylene	0.005	Toluene	1.0
Trans-1,2-dichloroethylene	0.1	Xylenes (total)	10.0
Dichloromethane	0.005	1,2,4-trichlorobenzene	0.07
1,1,2-trichloroethane	0.005	1,3-dichloropropane	0.005
Chloroform	Monitor only	Chlorobenzene	0.1
Bromodichloromethane	Monitor only	1,1-dichloroethylene	Monitor only
Bromoform	Monitor only	M-dichlorobenzene	Monitor only
1,1-dichloropropene	Monitor only	1,1-dichloroethane	Monitor only
1,1,2,2-tetrachloroethane	Monitor only	Chloromethane	Monitor only
Bromomethane	Monitor only	1,2,3-trichloropropane	Monitor only
1,1,1,2-tetrachloroethane	Monitor only	Chloroethane	Monitor only
2,2-dichloropropane	Monitor only	O-chlorotoluene	Monitor only
P-chlorotoluene	Monitor only	Bromobenzene	Monitor only
1,3-dichloropropene	Monitor only		

### **After Receiving VOC Test Results**

1. Review the sample results and send a copy of results to the local health department. (Note if you use the DEQ lab and have properly completed the sample form, results are sent to the local health department.)
2. If the sample shows “non-detect” for all analytes:
  - No further action is necessary unless conditions change or you are notified otherwise by the local health department.
  - Sample on the frequency established by your health department (usually 1 sample every 6 years with a written waiver.)
3. If the sample indicates the presence of one or more of the analytes:
  - Immediately contact your health department for instructions regarding further sampling requirements.
  - Compliance with MCLs is determined by averaging results for four quarters or if one confirmed result is four times higher than the standard.